



Essential Skills Criteria for Application of Number

Level 1 and Level 2

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Contents

The criteria	3
Introduction.....	3
Skill standards and assessment weightings	4
Level 1	4
Level 2.....	6
Scheme of assessment	7

The criteria

Introduction

1. Essentials Skills qualifications in Application of Number assess three components:

- Representing information
- Carrying out calculations and
- Interpreting results and presenting findings.

Representing - selecting the mathematics and information to model a situation	Calculating - processing and using mathematics	Interpreting - interpreting and presenting findings
<ul style="list-style-type: none"> ■ Learners recognise that a situation has aspects that can be represented using mathematics ■ Learners make an initial model of a situation using suitable forms of representation ■ Learners decide on the methods, operations and tools, including information and communication technology (ICT), to use in a situation ■ Learners select the mathematical information to use. 	<ul style="list-style-type: none"> ■ Learners use appropriate mathematical procedures ■ Learners examine patterns and relationships ■ Learners change values and assumptions or adjust relationships to see the effects on answers in models ■ Learners find results and solutions. 	<ul style="list-style-type: none"> ■ Learners interpret results and solutions ■ Learners draw conclusions in light of situations ■ Learners consider the appropriateness and accuracy of results and conclusions ■ Learners choose appropriate language and forms of presentation to communicate results and solutions.

2. Essential skills qualifications in Application of Number are available at Level 1 and Level 2. The criteria for these qualifications specify the requirements in terms of skill standards and coverage and range at each level. At each level of the qualification, these subsume the previous level's skill standards and the indicative coverage and range, supporting a progression-based suite of skills qualifications. The coverage and range statements provide an indication of the type of mathematical content learners are expected to apply in functional contexts; however, relevant content could also be drawn from equivalent NI Core Curriculum standards and NI Cross Curricular Skills.

3. These criteria should be used in conjunction with the Essential Skills Qualifications Criteria publication, which includes the criteria common to all Essential Skills qualifications at Level 1 and 2, and the controlled assessment regulations for the qualifications: Controlled Assessment Regulations for Essential Skills Communication.

Skill standards and assessment weightings

Level 1

Skill standards	Coverage and range	Assessment weighting
<p>Representing</p> <ol style="list-style-type: none"> 1. Understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine. 2. Identify and obtain necessary information to tackle the problem. 3. Select mathematics in an organised way to find solutions. 	<ol style="list-style-type: none"> a) Understand and use whole numbers and understand negative numbers in practical contexts; b) Add, subtract, multiply and divide numbers (whole and decimals) using a range of strategies; c) Understand and use equivalences between common fractions, decimals and percentages; d) Add and subtract decimals up to two decimal places; 	30–40%

Skill standards	Coverage and range	Assessment weighting
<p>Calculating</p> <p>4. Apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes.</p> <p>5. Use appropriate checking procedures at each stage.</p>	<p>e) Solve simple problems involving ratio, where one number is a multiple of the other;</p> <p>f) Use simple formulae expressed in words for one- or two-step operations;</p> <p>g) Solve problems requiring calculation with common measures, including money, time, length, weight, capacity and temperature;</p> <p>h) Convert units of measure in the same system;</p>	<p>30–40%</p>
<p>Interpreting</p> <p>6. Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations.</p>	<p>i) Work out areas and perimeters in practical situations;</p> <p>j) Construct geometric diagrams, models and shapes;</p> <p>k) Extract and interpret information from tables, diagrams, charts and graphs;</p> <p>l) Collect and record discrete data and organise and represent information in different ways;</p> <p>m) Find mean and range; and</p> <p>n) Use data to assess the likelihood of an outcome.</p>	<p>30–40%</p>

Level 2

Skill standards	Coverage and range	Assessment weighting
<p>Representing</p> <ol style="list-style-type: none"> 1. Understand routine and non-routine problems in familiar and unfamiliar contexts and situations. 2. Identify the situation or problems and identify the mathematical methods needed to solve them. 3. Choose from a range of mathematics to find solutions. 	<ol style="list-style-type: none"> a) Understand and use positive and negative numbers of any size in practical contexts; b) Carry out calculations with numbers of any size in practical contexts, to a given number of decimal places; c) Understand, use and calculate ratio and proportion, including problems involving scale; d) Understand and use equivalences between fractions, decimals and percentages; e) Understand and use simple formulae and equations involving one- or two-step operations; 	30–40%
<p>Calculating</p> <ol style="list-style-type: none"> 4. Apply a range of mathematics to find solutions. 5. Use appropriate checking procedures and evaluate their effectiveness at each stage. 	<ol style="list-style-type: none"> f) Recognise and use 2D representations of 3D objects; g) Find area, perimeter and volume of common shapes; h) Use, convert and calculate using metric and, where appropriate, imperial measures; i) Collect and represent discrete and continuous data, using ICT where appropriate; 	30–40%
<p>Interpreting</p> <ol style="list-style-type: none"> 6. Interpret and communicate solutions to multi-stage practical problems in familiar and unfamiliar contexts and situations. 7. Draw conclusions and provide mathematical justifications. 	<ol style="list-style-type: none"> j) Use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate; k) Use statistical methods to investigate situations; l) Use probability to assess the likelihood of an outcome. 	30–40%

Scheme of assessment

4. Assessment must cover all of the skill standards. Awarding organisations are responsible for determining the extent to which assessment tasks provide opportunities for learners to apply the indicative coverage and range.
5. Assessments may sample from the coverage and range within the Essential Skills qualifications. Awarding organisations must be able to demonstrate that any sampling of the coverage and range over time does not undermine the qualification as a measure of functionality at the level nor make sampled assessment content predictable. This must be supported by an assessment specification that details the awarding organisations approach to sampling for each assessment over time. Coverage of the complete range should be within a 3 – 4 paper cycle.
6. Essential Skills qualifications in Application of Number must be single component qualifications with assessment that focuses on the three interrelated process skills identified in the skill standards.
7. Specifications at each level must be consistent with the NI Core Curriculum Standards and the NI Curriculum Cross Curricular Skill of Using Mathematics.
8. Specifications for Essential Skills qualifications in Application of Number must allocate a weighting of 100 per cent to external assessment at levels 1 and 2.
9. Assessment must focus on functionality and the effective application of process skills in purposeful contexts and scenarios that reflect real-life situations.
10. Assessment of Essential Skills qualifications in Application of Number must have a minimum of 75 per cent open-response assessment at all levels.
11. Specifications must conform to the assessment weightings outlined in the skill standards. Assessment must provide opportunities to demonstrate each of the process skills and span a sufficient selection of the skill sub-sections within the specified ranges stated in the skill standards. The balance may vary between individual assessment tasks.
12. Assessment must require learners to demonstrate their ability to represent, calculate and interpret, using numbers (including algebra at level 2), geometry and statistics within functional contexts. Coverage of the complete range should be within a 3 – 4 paper cycle.
13. Mark schemes must clearly indicate how marks are allocated for each of the process skills (representing, calculating, and interpreting).
14. The duration of the assessment leading to an Essential Skills qualification at levels 1 and 2 in Application of Number must be a minimum of one and a half hours and a maximum of two hours.
15. Learners are permitted to use calculators within assessments.